

PATENT

Attorney Docket No. 13DV-13434

Ser. No. 09/477,422

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**REMARKS**

Claims 8-13, 16-18, 73 and 112 are pending in the application after cancellation of previously pending claim 47. The Examiner has indicated that all claims have been rejected, although the Examiner indicates that claims 16-18 contain allowable subject matter subject to a provisional double patenting over pending claims 16-18 of Application No. 09/244,578.

**I. Claim Rejections under 35 U.S.C. § 112**

Claim 47 has been rejected for allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. Claim 47 has been canceled, and so Applicant respectfully requests withdrawal of this rejection.

**II. Claim Rejections Under 35 U.S.C. § 102(b)**

Claim 8 is rejected under 36 U.S.C. § 102(b) as allegedly anticipated by Conner et. al. (ASMF article). The Examiner asserts that Conner discloses "[a]ll limitations of claim 8." See Final Rejection at p. 7.

Applicant respectfully submits that Conner does not disclose each and every limitation of claim 8 as amended, and therefore does not anticipate claim 8. Specifically, claim 8 is a method claim for preparing an article having a platinum-aluminide surface region. The 2d and 3d limitations of claim 8 provide that a layer of platinum is deposited on a substrate surface, and thereafter the platinum is diffused from the layer of platinum into the substrate surface. Thereafter, a source of aluminum is provided which is diffused into the substrate surface for a time sufficient to produce a substantially single phase surface region at the substrate surface.

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The surface region comprises an integrated aluminum content of from about 18 to about 28 percent by weight and an integrated platinum content of from about 18 to about 45 percent by weight, balance components of the substrate bulk composition. The surface region comprises a surface, distant from the substrate surface, and the surface region includes aluminum content and platinum content which is relatively high adjacent to the surface and decreases with increasing depth into the surface region and the substrate. *See* Specification at p. 7, line 27- page 8, line 1 (chemical compositions of the platinum aluminide region vary as a function of depth below the surface - Pt and Al content are relatively high adjacent to the surface and decrease with increasing depth into the platinum aluminide region and the substrate).

The Examiner asserts that "under the section [in Conner] titled 'Platinum Aluminide Coating,' it is disclosed that Pt was electroplated on the substrate and diffused therein before CVD aluminiding, at page 5 that the CVD diffusion aluminide coating produced thereby is a single phase coating, and in Figure 3 for the 'CVD PLATINUM ALUMINIDE' that the claimed concentration amounts of Al and Pt are contained in the coating." *See* Final Rejection at pp. 6-7. Accordingly, the Examiner concludes that Conner discloses all of the limitations of claim 8.

Applicant respectfully disagrees that Conner discloses all of the limitations of claim 8, as amended. At page 2, Conner discloses applying a platinum aluminide coating by either pack cementation or CVD. Conner expressly discloses that the platinum aluminide coating made by pack cementation is a two-phase layer (PtAl & NiAl matrix). At page 5, Conner discloses that, after engine testing, the pack PtAl coating exhibited a single phase Ni(Pt)Al additive layer, and that both platinum aluminide coatings exhibited regions of transformed coating of  $\beta$ -NiAl to  $\gamma$ . Fig. 3 discloses coating compositions prior to engine testing, including a graph labeled "CVD

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PLATINUM ALUMINIDE.” However, Fig. 3 for the “CVD PLATINUM ALUMINIDE” does not disclose a surface region which includes aluminum content and platinum content which is relatively high adjacent to the surface and decreases with increasing depth into the surface region and the substrate as required by claim 8. Rather, Fig. 3 for “CVD PLATINUM ALUMINIDE” illustrates a platinum aluminide coating wherein the Pt weight % *increases* from about 18 weight % at the surface to about 20 weight % at a distance of about 20 microns from the surface, *then decreases* to about 11 weight % at a distance of about 25 microns from the surface, then *increases again* to about 12 weight % at a distance of about 25 and about 40 microns from the surface, and *then decreases again*. See Fig. 3.

Since the cited sections of Conner do not disclose each and every limitation of claim 8, as amended, and specifically does not disclose a surface region which includes aluminum content and platinum content which is relatively high adjacent to the surface and decreases with increasing depth into the surface region and the substrate, Applicant respectfully submits that Conner does not anticipate claim 8 and requests that this rejection be withdrawn.

### **III. Claim Rejections Under 35 U.S.C. § 103**

Claims 9, 10, 11, 12, 13, 73 and 112 have been rejected under 35 U.S.C. § 103(a). See Final Rejection at pp. 7-9. The Examiner asserts that claim 11 is obvious over Conner; that claims 9, 10, 73 and 112 are obvious over Conner in view of Duderstadt, USPN 5,238,752 (“Duderstadt”); and that claims 12 and 13 are obvious over Conner in view of Wukusick, USPN 5,100,484 (“Wukusick”).

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**A. Claim 11 is Rejected as Allegedly Obvious Over Conner**

The Examiner asserts that, based on the Conner disclosure, "it would have been obvious to have derived the amounts of Pt in the range of claim 11 through routine experimentation to optimize the corrosion resistance of the coating." See Final Rejection at p. 7. However, claim 11 is dependent on claim 8 and therefore incorporates the limitations of claim 8. Since Conner does not disclose each and every limitation of claim 8 as discussed in Section II above, Conner does not disclose each and every limitation of claim 11. Specifically, Conner does not disclose a surface region which includes aluminum content and platinum content which is relatively high adjacent to the surface and decreases with increasing depth into the surface region and the substrate. Therefore, Conner does not support a *prima facie* case of obviousness for claim 11 and Applicant respectfully requests that this rejection be withdrawn.

**B. Claims 9, 10, 73 and 112 Are Rejected As Allegedly Obvious Over Conner in view of Duderstadt**

The Examiner asserts that claims 9, 10, 73 and 112 are allegedly obvious over Conner in view of Duderstadt. See Final Rejection at p. 8. However, claims 9 and 10 are dependent on claim 8. As discussed Conner does not disclose each limitation of claim 8 including a surface region which includes aluminum content and platinum content which is relatively high adjacent to the surface and decreases with increasing depth into the surface region and the substrate. Duderstadt likewise does not disclose these limitations. Since Conner and Duderstadt in combination do not disclose each and every limitation of claim 8, these references do not form a *prima facie* case of obviousness of claims 9 and 10 and Applicant respectfully requests that this rejection be withdrawn.

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Claims 73 and 112 similarly include the limitation of a substantially single phase diffusion aluminide layer on a substrate which includes a nickel base superalloy substrate, the aluminide layer including an average aluminum concentration in the range of about 18 to about 28 % by weight and an average platinum concentration in the range of about 8 to about 45 % by weight, wherein the aluminide layer further comprises a surface, and includes aluminum content and platinum content which is relatively high adjacent to the surface and decreases with increasing depth into the aluminide layer and the substrate. The Examiner asserts, just as for claim 8, that Conner discloses in Fig. 3 for the "CVD PLATINUM ALUMINIDE" discloses a surface region which includes aluminum content and platinum content which is relatively high adjacent to the surface and decreases with increasing depth into the surface region and the substrate. Applicant disagrees, and submits that Fig. 3 for "CVD PLATINUM ALUMINIDE" in fact illustrates a platinum aluminide coating wherein the Pt weight % *increases* from about 18 weight % at the surface to about 20 weight % at a distance of about 20 microns from the surface, *then decreases* to about 11 weight % at a distance of about 25 microns from the surface, *then increases again* to about 12 weight % at a distance of about 25 and about 40 microns from the surface, and *then decreases again*. See Fig. 3.

Applicant respectfully submits that Conner does not disclose this limitation of claim 73 of an aluminide layer comprising a surface, and including aluminum content and platinum content which is relatively high adjacent to the surface and decreases with increasing depth into the aluminide layer and the substrate, just as it does not disclose the similar limitation for claim 8. Therefore, since each and every limitation of claims 73 and 112 is not disclosed by the combination of Conner and Duderstadt, these references in combination do not form a *prima*

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*facie* case of obviousness. Applicant therefore respectfully requests that this rejection be withdrawn.

C. **Claims 12 and 13 are Rejected as Allegedly Obvious over Conner in View of Wukusick**

Finally, claims 12 and 13 have been rejected as allegedly obvious over Conner in view of Wukusick. *See* Final Rejection at pp. 8-9. Claims 12 and 13 are dependent from claim 8. As discussed, Conner does not disclose each limitation of claim 8 including a surface region which includes aluminum content and platinum content which is relatively high adjacent to the surface and decreases with increasing depth into the surface region and the substrate. Wukusick likewise does not disclose these limitations. Since Conner and Wukusick in combination do not disclose each and every step of claim 8, these references do not form a *prima facie* case of obviousness of claims 12 and 13.

Applicant respectfully submits that these references, alone or in combination, do not disclose each and every limitation of the rejected claims and therefore that these rejections should be withdrawn.

IV. **Double Patenting Rejection**

Claims 8-13 and 16-18 have been *provisionally* rejected under 35 U.S.C. § 101 as claiming the same invention as that of claims 8-13 and 16-18 of copending Application No. 09/244,578. Claims 47, 73, and 112 have been *provisionally* rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 47, 71, and 110 of copending application Ser. No. 09/244,578.

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A. **The Statutory Double Patenting Rejection of Claims 8-13 Should Be Withdrawn**

With respect to the double patenting rejection of claims 8-13 under 35 U.S.C. § 101 over claims 8-13 of copending Application No. 09/244,578, Applicant respectfully submits that this rejection should be withdrawn. The statutory basis for a rejection for double patenting under 35 U.S.C. § 101 is that the same invention is being claimed twice. See MPEP § 804(II)(A). "'Same invention' means identical subject matter." See *id.*, citing to *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1984); *In re Vogel*, 422 F.2d 438, 164 U.S.P.Q. 619 (CCPA 1970); *In re Ockert*, 245 F.2d 467, 114 U.S.P.Q. 330 (CCPA 1957). The MPEP states that "a reliable test for double patenting under 35 U.S.C. § 101 is whether a claim in the application could be literally infringed without literally infringing a corresponding claim in the patent." See MPEP § 804(II)(A).

Here, there is such an embodiment that would literally infringe claims 8-13 in the present application but not literally infringe claims 8-13 of the '578 application. Specifically, an article having a platinum-aluminide surface region prepared according to the method of claim 13 wherein the surface region has an integrated aluminum content of 28 percent by weight and an integrated platinum content of 45 percent by weight would not literally infringe claim 8 of the '578 application. The reason for this is that a platinum-aluminide surface region of 28 wt. % aluminum content does not fall within the literal scope of claim 8 of the '578 application, which claims an integrated aluminum content in the platinum-aluminide surface region of about 18 to about 24 wt. %.

Since there is an embodiment that would literally infringe claims 8-13 of the '422 application but not literally infringe claims 8-13 of the '578 application, Applicant respectfully

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submits that this statutory double patenting rejection of claims 8-13 over claims 8-13 of the '578 application under 35 U.S.C. § 101 should be withdrawn.

**B. Statutory Double Patenting Rejection of Claims 16-18**

Applicant acknowledges this rejection, and will amend or cancel claims 16-18 if this rejection remains appropriate at the time these claims are allowed. Applicant notes however that, at this time, claims 16-18 of the '578 application have not been allowed.

**C. Nonstatutory Double Patenting Rejection of Claims 47, 73 and 112**

Applicant acknowledges this rejection, and will amend or cancel claims 73 and 112 or file a terminal disclaimer over claims 71 and 110 of the '578 application, if this rejection remains appropriate at the time these claims are allowed. Applicant notes however that, at this time, claims 73 and 112 of the '578 application have not been allowed. Finally, the rejection of claim 47 is moot in light of the cancellation of this claim.

**CONCLUSION**

Applicant submits that the application is in condition for allowance and respectfully requests entry of this amendment and a notice of allowance for all pending claims 8-13, 16-18, 73 and 112. Should the Examiner determine that any further action is necessary to place this application in condition for allowance, the Examiner is kindly requested and encouraged to telephone Applicant's undersigned representative at the number listed below.

Applicant authorizes the fee of \$1590.00 for a four month extension of time and the fee of \$790.00 for the Request for Continued Examination to be deducted from Deposit Account No. 50-0206. If any variation is determined between the amount authorized to be charged and the



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amount due, please credit or deduct the difference from the undersigned's Deposit Account No.

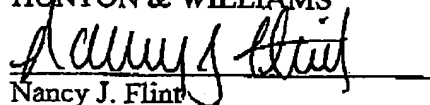
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Respectfully submitted,

HUNTON & WILLIAMS

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